REMARKS

Claims 81, 84 and 85 are amended. Claims 73 and 88 are cancelled. Claims 65-72, 74-77, 81-82 and 84-85 are pending in the application.

Claims 65-72, 74-77, 81-82, 84-85 and 88 stand rejected under 35 U.S.C. § 103(a) as being obvious over the abstract of Japan Patent 10287939 ('939), or alternatively over Kardokus, U.S. Patent No. 6,113,761. The Examiner is reminded by direction to MPEP § 2143 that a proper obviousness rejection has the following three requirements: 1) there must be some suggestion or motivation to modify or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the combined references must teach or suggest all of the claim limitations. Pending claims 65-72, 74-77, 81-82 and 84-85 are allowable over each of Kardokus and '939 for at least the reason that the referencesdo not disclose or suggest each and every feature in any of those claims.

Independent claim 65 recites a physical vapor deposition target consisting essentially of a copper alloy having silver present in the alloy from less than 1.0 at% to 0.001 at%. The Examiner indicates at page 3 of the present Action that the cited references disclose grain size and composition which overlaps those of the rejected claims and therefore any of the properties recited in the claims would be inherently possessed by the teachings of the cited references. Applicant notes that Kardokus distinctly discloses a copper target meeting a minimum 99.999 wt. % purity which is achieved by maintaining less than 10 ppm, by weight, of alloying elements (col. 5, ll. 12-24; col. 1, ll. 61-66 and col. 1, ll. 16-23). Kardokus specifically indicates that micro-alloy grain stabilizers selected from Ag, Sn, Te, In, Mg, B, Bi, Sb and P are added to the alloy in an amount of from 0.3 ppm to 10 ppm (col. 1, ll. 63-67 and col. 5, ll. 19-24). Kardokus further indicates that a target of at

least 99.999 wt. % purity is important to allow production of small line widths having low resistivity and having purity of at least 99.999 wt. % (col. 1, ll. 17-24; col. 2, ll. 43-47; col. 5, ll. 19-25 and col. 7, ll. 26-38). Accordingly, Kardokus specifically teaches away from utilization of greater than 10 ppm, by weight, of alloying elements and inclusion of higher amounts of alloying elements would render the Kardokus targets unsuitable for their intended purpose.

Applicant further notes that the entire range of silver content recited in claim 65 is above 10 ppm, by weight (the lowest amount of 0.001 at% silver recited in claim 65 corresponding to greater than 16 ppm, by weight). Accordingly, the recited range does not overlap with the Kardokus disclosure as indicated by the Examiner. Further, as indicated above, utilization of the recited silver content would render the Kardokus targets unsuitable for their intended purpose. Accordingly, independent claim 65 is not rendered obvious by Kardokus and is allowable over this reference.

Eguchi discloses a copper alloy that contains Cr, Pb and/or Bi, rare earth metals and optionally Zr. In addition to these elements the disclosed copper alloy can also contain Sn, Mg, Ni, Ag, Zn, Si and/or Mn (abstract and translation at paragraph 5). As indicated in '939, Cr is included to raise the strength without greatly lowering conductivity and at least 0.1 wt. % of Cr must be present to provide the desired alloy strengthening (translation at paragraph 6). The disclosure also indicates that rare earth elements are provided to improve stamping qualities and that at least 0.002 wt. % of rare earth elements are required for the desired effect (paragraph 8). Lead and/or bismuth is indicated as being required at a minimum concentration of 0.002 wt. % to provide precision stamped ends and surfaces, prevent burs and provide longer life of stamped forms (col. 9). Because '939

specifically requires these elements, this reference does not disclose or suggest the claim 65 recited target consisting essentially of an alloy of copper and from less than 1.0 at% to 0.001 at% silver. Further, '939 distinctly teaches away from copper alloys not containing the above discussed required amounts of alloying elements.

The Examiner indicates at page 5 of the present action that applicant has a burden of showing the basic and novel characteristics of the claimed composition "i.e. as showing that the introduction of these components would materially change the characteristics of applicants composition" (referring to the use of the expression "consisting essentially of" which limits the scope of the claim to "specified ingredients and those that do not materially effect the basic and novel characteristics of the composition"). First, '939 is not a proper basis of the present § 103 rejection since omission of the required elements would make the invention disclosed in '939 unsuitable for its intended purpose and the '939 disclosure specifically teaches away from their omission. Second, even if '939 were available as a proper basis of a § 103 rejection, '939 itself provides the showing of materiality since the reference specifically indicates that the chromium, rare earth elements, and Pb/Bi are required to produce the effects discussed above. Accordingly, independent claim 65 is not rendered obvious by '939.

Dependent claims 66-67 are allowable over each of Kardokus and '939 for at least the reason that they depend from allowable base claim 65.

Each of independent claims 68, 71, 74 and 81 (as amended) recite targets consisting essentially of copper and from less than 1.0 at% to 0.001 at% of silver and/or tin. Claims 68, 71, 74 and 81 are allowable over Kardokus and '939 for at least reasons similar to those discussed above with respect to independent claim 65.

Claims 84 and 85 are amended to properly depend from claim 81. Dependent claims 69-70, 72, 75-77, 82 and 84-85 are allowable over each of Kardokus and '939 for at least the reason that they depend from corresponding allowable base claims 68, 71, 74 and 81.

With respect to claim 88, without admission as to the propriety of the Examiner's rejections, claim 88 is cancelled.

Claim 73 stands rejected under 35 U.S.C. § 103(a) over Reda "Amorphous Copper-Silver Films with High Stability". Without admission as to the propriety of the Examiner's rejection, claim 73 is cancelled.

For the reasons discussed above, pending claims 65-72, 74-77, 81-82 and 84-85 are allowable. Accordingly, applicant respectfully requests formal allowance of such pending claims in the Examiner's next action.

Respectfully submitted,

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